Sexually Transmitted Diseases

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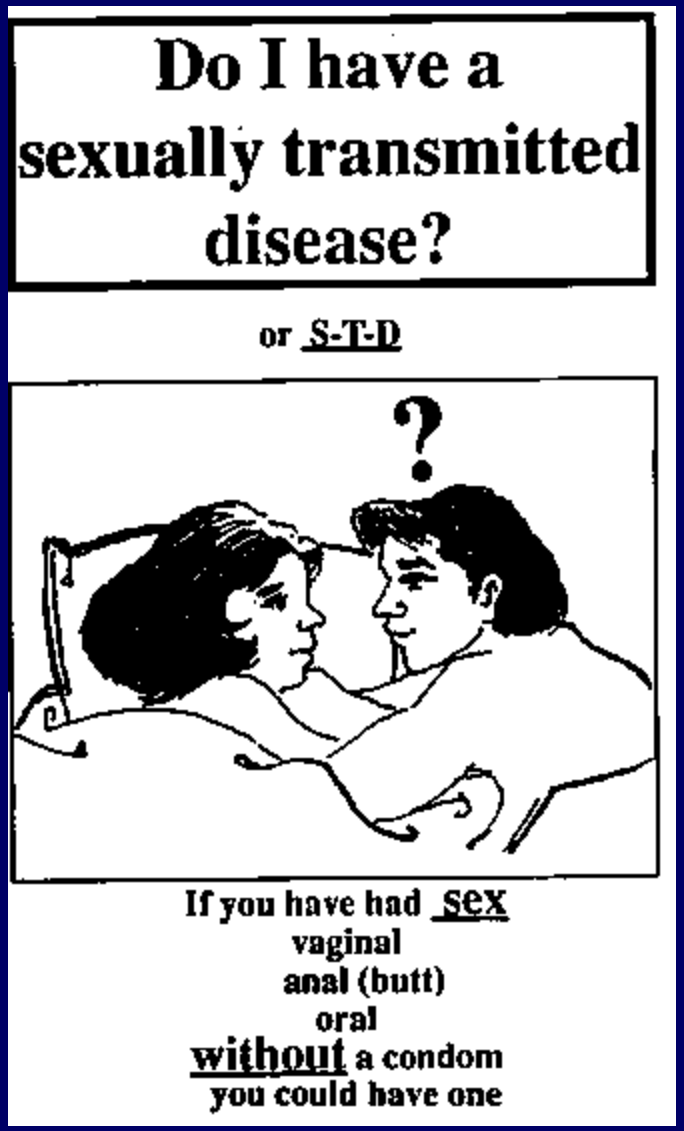


Disclosures

- As far as I know, I've never acquired an STD so everything I know I learned from books.
- I have no financial interests in STD's and would love to see them vanish from the face of the earth.
- Try not to judge. You need your patients to trust you and give you the full story.

The Burden

"Curable STD's"

- North America/Europe: 20/1000
- Eastern Europe/Australia: 30/1000
- South/Southeast Asia: 50/1000
- Latin America/Caribbean: 70/1000
- Sub Saharan Africa: 120/1000

The Burden

"Curable STD's" New Infections

- North America/Europe: 30 million
- Eastern Europe/Australia: 20 million
- South/Southeast Asia: 150 million
- Latin America/Caribbean: 40 million
- Sub Saharan Africa: 70 million
- Worldwide: 340 million

Chlamydia

Serovars D, Da, E, F, G, Ga, H, I, Ia, J, K

- Synonyms: Non-gonococcal urethritis
- Organism: *Chlamydia trachomatis* (obligate intracellular bacteria)
- Epidemiology: “Most common” STD in western countries, 92M cases in 1999
- Diagnosis: Tissue culture, DFA, Elisa, PCR and Serology

Chlamydia Urethritis

- Neonatal disease: Conjunctivitis & pneumonia
- Adult Complications:
  - cervicitis
  - PID
  - epidydimitis
  - arthritis (with Reiter's)
  - infertility
  - ectopic pregnancy

Chlamydia Urethritis

Treatment:

- Azithromycin 1gm,
- Doxycycline 100mg bid F7,
- EES 500mg qid f7, 250mg qid f14, 800mg qid f7, 400mg qid f14;
- Ampicillin 500mg tid f7;
- Ofloxacin 300mg bid f7

Chlamydia
Serovars L1, L2, L2a, L3

- Synonyms: Lymphogranuloma venereum, Nicolas-Favre Durand, tropical bubo, climatic bubo, d'emble bubo, scrofulous bubo, subacute inguinal lymphogranulomatosis, inguinal lymphogranuloma
- Organism: *Chlamydia trachomatis*
- Diagnosis: Same as for urethritis (need tissue, not just drainage from fistula)

LGV

Chlamydia/LGV

- Complications: elephantiasis, rectal cancer
- Stages (Incubation 1-2 weeks):
  - Primary lesion: Vesicle for 2-3 days
  - Lymphadenitis/bubo 2-4 weeks after primary lesion
  - Tertiary: Genitoanorectal syndrome: proctitis, fistulae, strictures, anorectal destruction

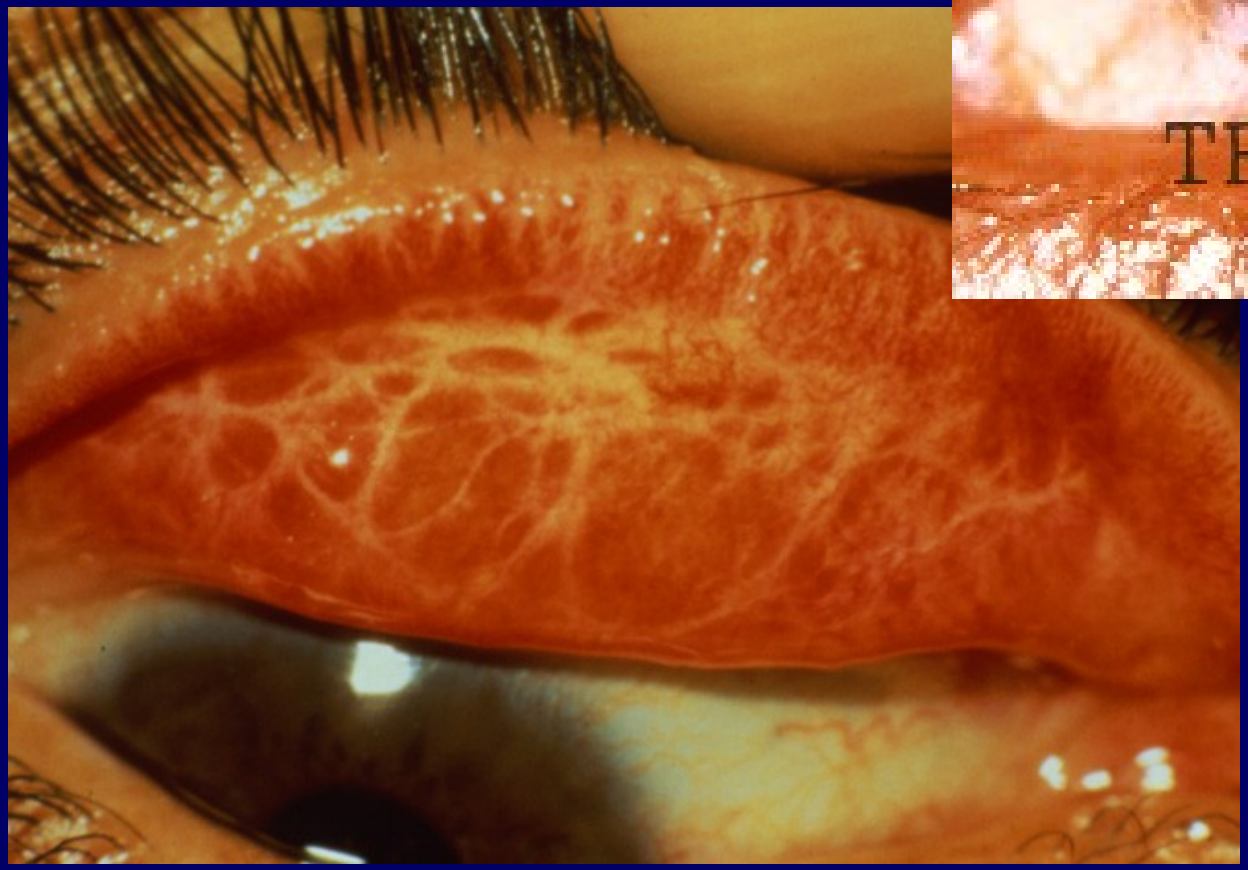
Chlamydia LGV

- Treatment
  - Doxycycline 100mg bid f21
  - EES 500mg qid f21
  - Tetracycline 500mg qid f14-28
  - Tianfenicol 500mg tid f14-21
  - Sulfadiazine 500mg qid f14-21
  - Sulfosoxazole 4gm then 2gm/d f14-21
  - May need retreatment with any of these

Chlamydia
Serovars A, B, Ba, C

- Synonyms: Trachoma
- Epidemiology: 84 million victims in over 50 endemic countries
- Organism: *Chlamydia trachomatis*
- Diagnosis: PCR best
- Stages:
  - Follicular trachoma
  - Trachomatous inflammation
  - Trachomatous scarring
  - Corneal opacity

Trachoma



Trachoma

Complications:

- Children: acute disease, especially in poverty, close conditions, other family members
- Adults: cicatricial disease and blindness
- Trichiasis, punctate keratitis
- May also involve nasopharynx

Trachoma

- Treatment
  - Azithromycin 1gm po (peds: 20mg/kg)
  - PLUS: Tetracycline ointment
- WHO guidelines:
  - If prevalence greater than 10% in 1-9 y/o age group: treat everybody
  - If 5-10% treat only victims but everyone in family
  - Less than 5%: Consider targeted treatment

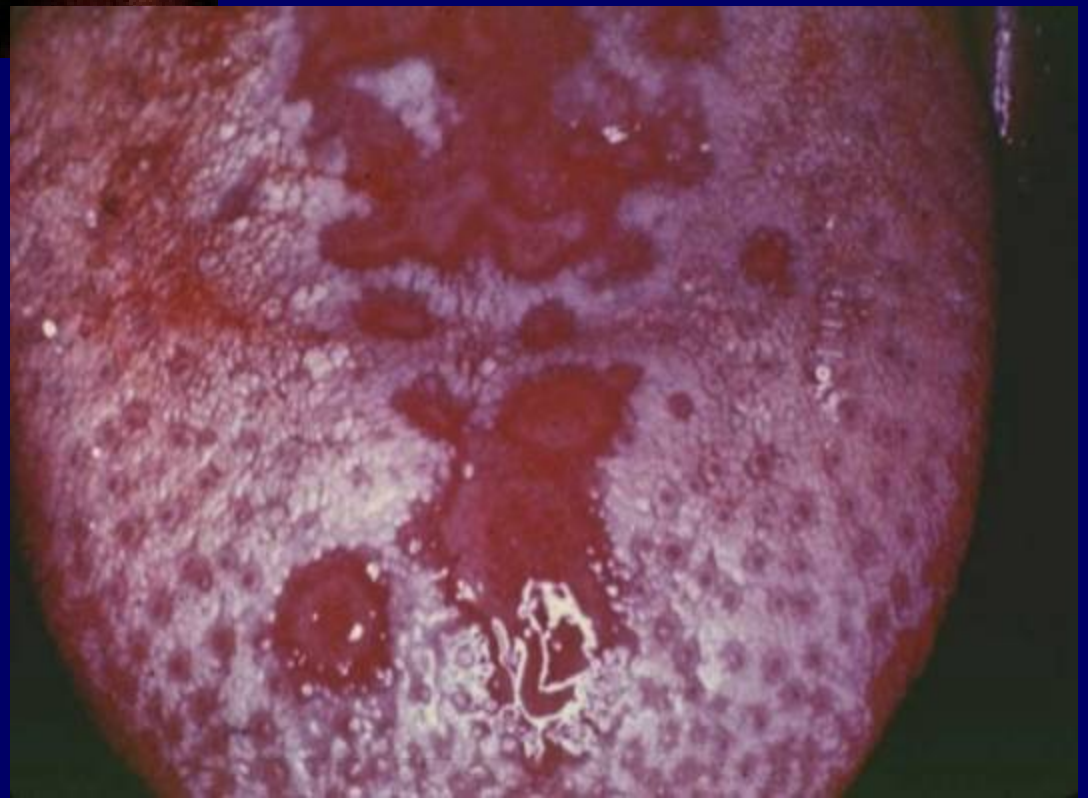
Gonococcal Infection

- Synonyms: blennorhagia, blennorrhea, drip, burner; clap; dose; gleet; glim; gonorita; haircut; head cold; morning drop; strain; tear and others I’m sure.
- Epidemiology: Highest in sub-Saharan Africa & Southeast Asia. 62M cases worldwide in 1999
- Organism: *Neisseria gonorrhea*
- Diagnosis: Culture (Thayer-Martin), PCR, Hybrid capture, Gram Stain

Gonorrhea

- Neonatal disease:
  - Conjunctivitis
  - Scalp abscesses
- Complications:
  - Disseminated gonococemia
  - Oropharyngeal disease
  - Arthritis
  - Salpingitis/Pelvic Inflammatory disease
  - Peritonitis
  - Epidydimitis
  - Infertility

GC



Disseminated GC

Gonorrhea

Treatment (cervix, urethra, rectum)

- Ceftriaxone 125 mg IM
- Ciprofloxacin 500mg
- Ofloxacin 400mg
- Levofloxacin 250 mg
- Azithromycin 1 gm
- Doxycycline 100mg bid f7
- Cefixime 400mg (discontinued 2002)

Gonorrhea

Treatment alternatives

- Spectinomycin 2gm IM
- Gatifloxacin 400mg
- Norfloxacin 800 mg
- Lomefloxacin 400mg

Gonorrhea

Treatment

- Conjunctivitis
  - Ceftriaxone 1 gm IM
- Disseminated GC
  - Ceftriaxone 1 gm q8
  - Alternatives: Cefotaxime IV, Ciprofloxacin IV, Ofloxacin IV, Levofloxacin IV, Spectinomycin IM
  - After 24-48 hours of improvement may switch to Ciprofloxacin, Ofloxacin or Levofloxacin orally

Gonorrhea

Pediatric

- 25-50mg/kg IV or IM not to exceed 125 mg
- Prophylaxis for Ophthalmia Neonatorum
  - 1% Silver nitrate
  - .5% Erythromycin
  - 1% Tetracycline

Donovanosis

- Synonyms: Granuloma inguinale, granuloma venereum, chronic venereum ulcer, ulcerating granuloma of the pudendum, granuloma donovani
- Organism: *Calymmatobacterium granulomatis* (*Donovania granulomatis*)
- Diagnosis: Culture (very difficult), biopsy

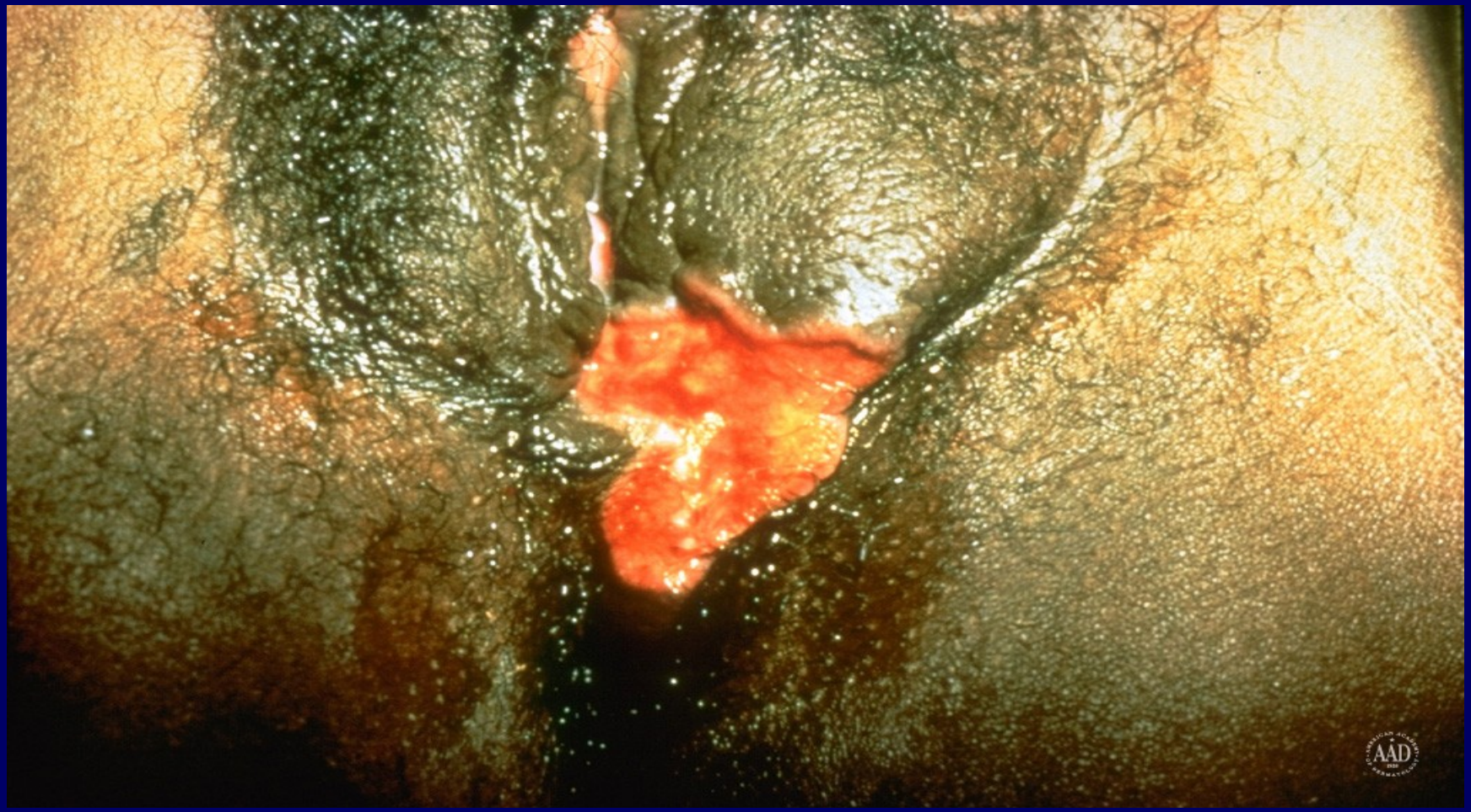
Granuloma Inguinale

Donovanosis

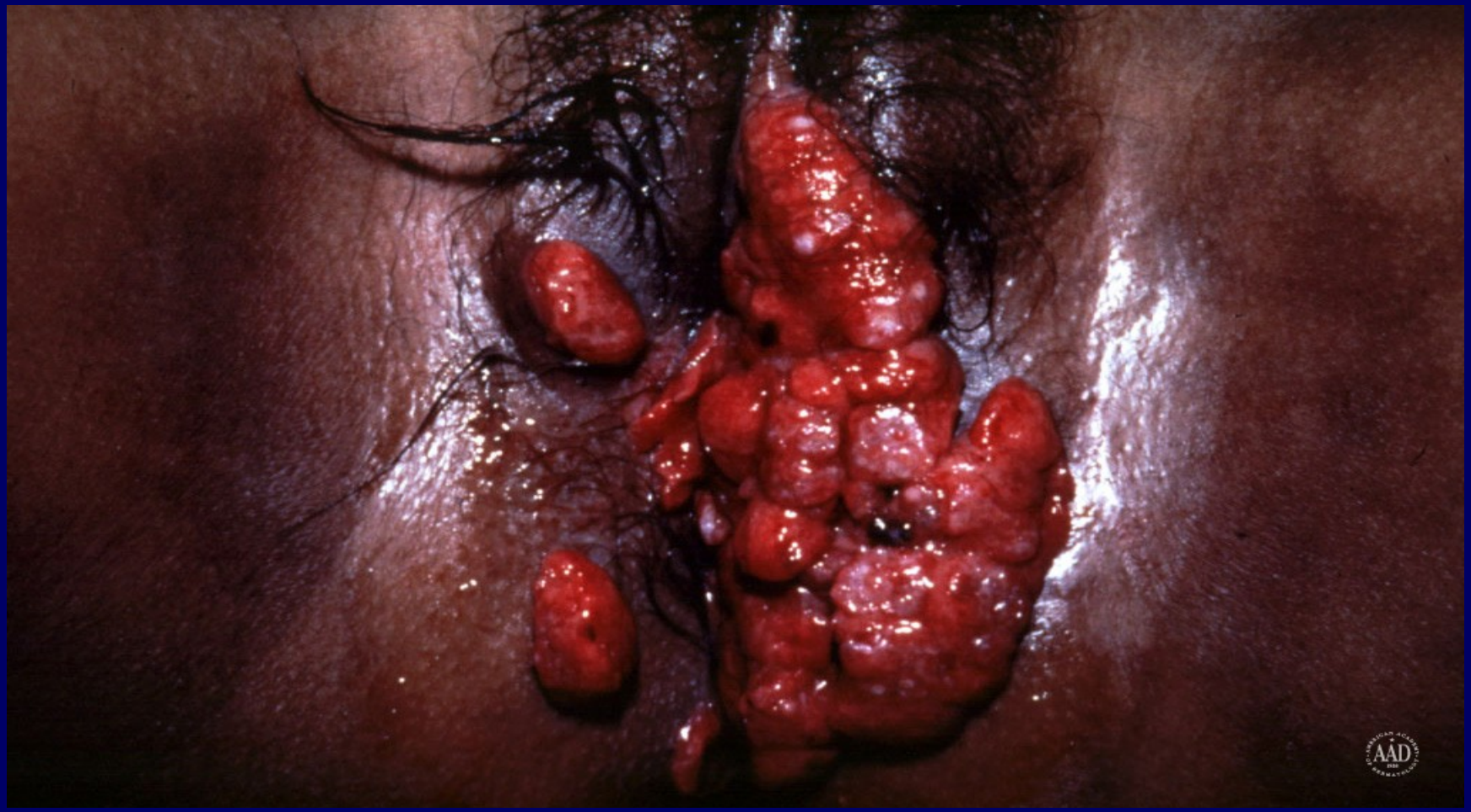
Where?

- US (rare)
- India
- Papua
- New Guinea
- Central Australia
- Southern Africa

Granuloma Inguinale



Granuloma Inguinale



Donovanosis

Treatment

- Doxycycline: 100mg bid f21
- Trimethoprim/Sulfa: 800/160mg bid f21

Alternatives

- Ciprofloxacin: 750mg bid f21
- EES: 500mg qid f21
- Azithromycin: 1gm f21

Chancroid

- Synonyms: ulcus mole, soft chancre, dwarf chancre
- Painful ulcer
- Most common cause of genital ulcer in Africa and South-east Asia
- Organism: *Haemophilus ducreyi* (gram negative coccobacillus)
- Diagnosis: Gram stain (school of fish), culture (difficult), PCR

Chancroid

Chancroid

Where?

- Asia
  - Southeast Asia
- Africa
  - (10-30% of STD's)
- Caribbean
- Latin America
- US:
  - Endemic areas south Florida and New York City. Outbreaks: Texas, California, Florida

Chancroid

Chancroid

Chancroid

Treatment

- Azithromycin: 1 gm
- Ceftriaxone: 250mg IM
- Ciprofloxacin: 500mg bid f3
- EES: 2gm X 4
- EES: 500mg qid f7

Herpes: The Gift that keeps on Giving

- Synonyms: Herpes genitalis
- Organism: *Herpes simplex* (HSV-2, HSV-1)
- Diagnosis:
  - Culture
  - PCR
  - Cytologic/Tzanck
  - ELISA
  - Immunoblot

Chronic HSV

Herpes

- “Most common” STD
- 50 million in US with genital HSV
- 1st time genital HSV
  - 70% HSV-2, 30% HSV-1
- HSV-2: more frequent recurrences
- Up to 80% incidence in sex workers

Herpes-First Episode

Treatment

- Acyclovir 400 mg orally three times a day for 7-10 days
- Acyclovir 200 mg orally five times a day for 7-10 days
- Famciclovir 250 mg orally three times a day for 7-10 days
- Valacyclovir 1 g orally twice a day for 7--10 days

Herpes-Recurrences

Treatment

- Acyclovir 400 mg orally three times a day for 5 days
- Acyclovir 200 mg orally five times a day for 5 days
- Acyclovir 800 mg orally twice a day for 5 days
- Famciclovir 125 mg orally twice a day for 5 days
- Valacyclovir 500 mg orally twice a day for 3--5 days
- Valacyclovir 1.0 g orally once a day for 5 days

Herpes-Prophylaxis/Supression

Treatment

- Acyclovir 400 mg orally twice a day
- Famciclovir 250 mg orally twice a day
- Valacyclovir 500 mg orally once a day
- Valacyclovir 1.0 gram orally once a day.

Herpes-Recurrent in HIV

Treatment

- Acyclovir 400 mg orally three times a day for 5--10 days
- Acyclovir 200 mg five times a day for 5--10 days
- Famciclovir 500 mg orally twice a day for 5--10 days
- Valacyclovir 1.0 g orally twice a day for 5--10 days.

Herpes-Supression in HIV

Treatment

- Acyclovir 400--800 mg orally twice to three times a day
- Famciclovir 500 mg orally twice a day
- Valacyclovir 500 mg orally twice a day

Herpes + HIV

- Increased risk of HIV acquisition
- Increased risk of HIV transmission

Bacterial Vaginosis

- Epidemiology: Most common vaginal infection (12-25% clinic population, 32-64% in STD clinics
- Organism: *Gardnerella vaginalis*
- Diagnosis:
  - Clue cells
  - Whiff test
  - DNA probe
  - Elevated pH (card test)
- Complications:
  - Endometritis
  - Premature labor

Bacterial Vaginosis

Treatment

- Metronidazole 500 mg orally twice a day for 7 days
- Metronidazole gel 0.75%, one full applicator (5 g) intravaginally, once a day for 5 days
- Clindamycin cream 2%, one full applicator (5 g) intravaginally at bedtime for 7 days.

Alternatives

- Metronidazole 2 g orally in a single dose
- Clindamycin 300 mg orally twice a day for 7 days
- Clindamycin ovules 100 g intravaginally once at bedtime for 3 days.

Bacterial Vaginosis

Treatment in Pregnancy

- Metronidazole 250 mg orally three times a day for 7 days
- Clindamycin 300 mg orally twice a day for 7 days.

Routine treatment of sex partners not recommended (no influence on recurrence)

Trichomonas

- Epidemiology: 10-30% clinic population, 30% in STD clinics
- Organism: *Trichomonas vaginalis*
- Diagnosis:
  - Microscopy
  - Culture
  - PCR
- Complications
  - Preterm delivery

Trichomonas

- Treatment
  - Metronidazole 2gm
  - Metronidazole 500mg bid f7
  - Use single dose treatment in pregnant patients
- Partners should be treated

Vulvovaginal candidiasis

- Synonyms: VVC
- Epidemiology: Ubiquitous
- Organism: *Candida* sp. + others
- Diagnosis: KOH exam
- Complications*:
  - Chronic fatigue syndrome/Fibromyalgia
  - Crohn’s
  - Diabetes
  - Lupus
  - HBP
  - Dyslipidemia
  - Psoriasis

  *If you believe everything you read

Vulvovaginal Candidiasis

Treatment

- ***Intravaginal Agents:***
- **Butoconazole** 2% cream 5 g intravaginally for 3 days
- **Butoconazole** 2% cream 5 g (Butaconazole1-sustained release), single intravaginal application
- **Clotrimazole** 1% cream 5 g intravaginally for 7--14 days
- **Clotrimazole** 100 mg vaginal tablet for 7 days
- **Clotrimazole** 100 mg vaginal tablet, two tablets for 3 days
- **Clotrimazole** 500 mg vaginal tablet, one tablet in a single application
- **Miconazole** 2% cream 5 g intravaginally for 7 days
- **Miconazole** 100 mg vaginal suppository, one suppository for 7 days
- **Miconazole** 200 mg vaginal suppository, one suppository for 3 days
- **Nystatin** 100,000-unit vaginal tablet, one tablet for 14 days
- **Tioconazole** 6.5% ointment 5 g intravaginally in a single application
- **Terconazole** 0.4% cream 5 g intravaginally for 7 days
- **Terconazole** 0.8% cream 5 g intravaginally for 3 days
- **Terconazole** 80 mg vaginal suppository, one suppository for 3 days.

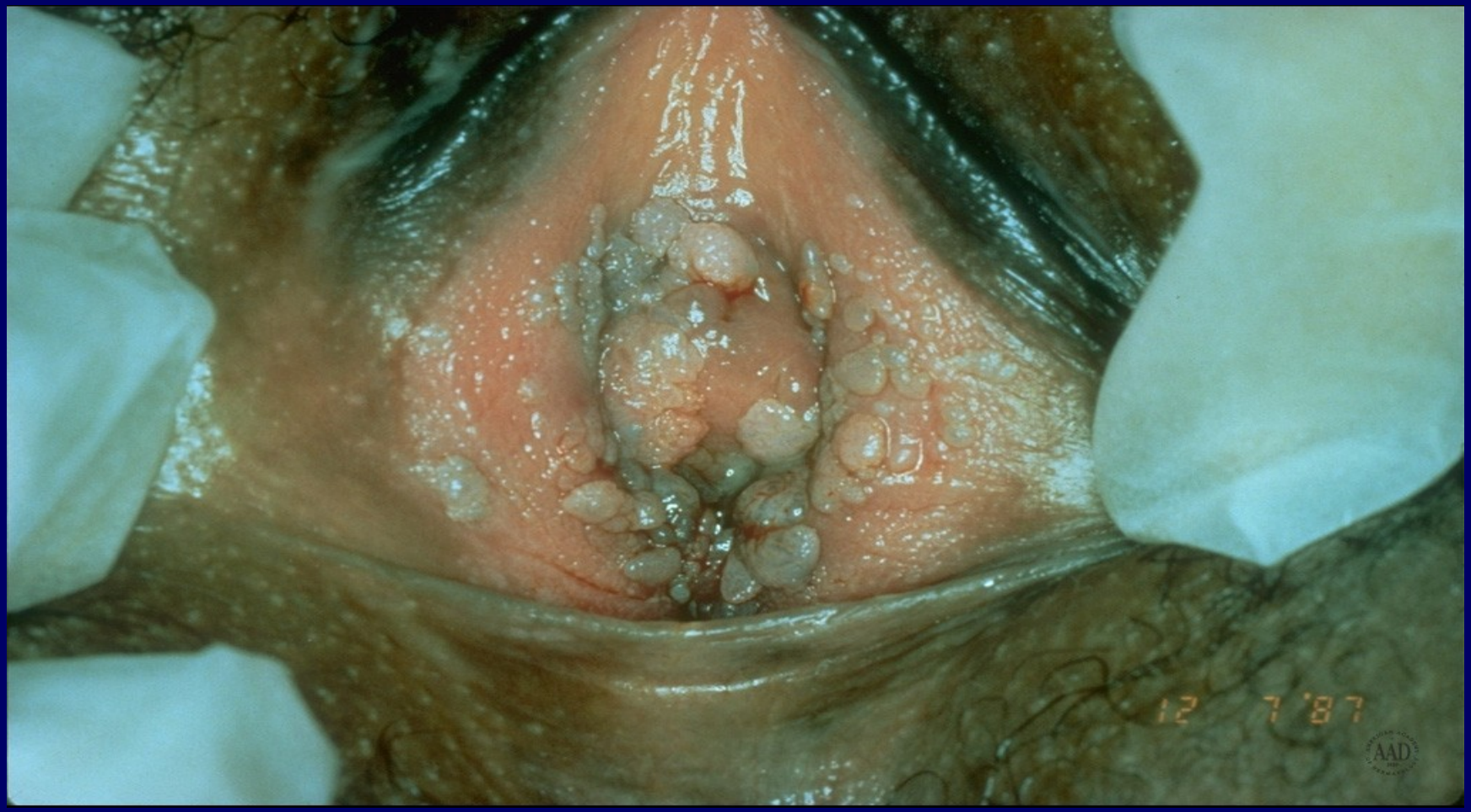
- ***Oral Agent:***
- **Fluconazole** 150 mg oral tablet, one tablet in single dose.

HPV

- “Most common” STD
- Over 100 serotypes, 25 mucosal types
- HPV 16 & 18
  - Cervical cancer
  - Anogenital
  - Some upper aerodigestive and skin cancer
- 15-40% incidence in women
- Treatment: NOT curative: cryotherapy, podifilox, imiquomod, TCA, laser, curettage, excision
- Vaccine

HPV

HPV



Acuminata

Condyloma NOS

Lata

HPV + HIV

- Much higher transformation to cervical cancer (but not necessarily more invasive)
- 7X risk of (cervical) CIN if have HIV
- 16X risk of (vulvar) VIN if have HIV
- HAART does not seem to affect these rates

HIV

Statistics 2004

4.9 million new infections

3.1 million deaths

40 million infected

20 million deaths since identified

More than 3 million children infected (<15)

HIV Orphans

- Nigeria: 1,800,000
- South Africa: 1,100,000
- Tanzania: 980,000
- Zimbabwe: 980,000
- Uganda: 940,000
- 78% of all orphans in Zimbabwe and Botswana
- ½ of all orphans in Sub-Saharan Africa

HIV

HIV-1

- 20-30% maternal fetal transfer rate
- Worldwide prevalence
- Rising prevalence in most countries

HIV-2

- <4% maternal fetal transfer rate
- West Africa, Portugal, India
- Stable prevalence

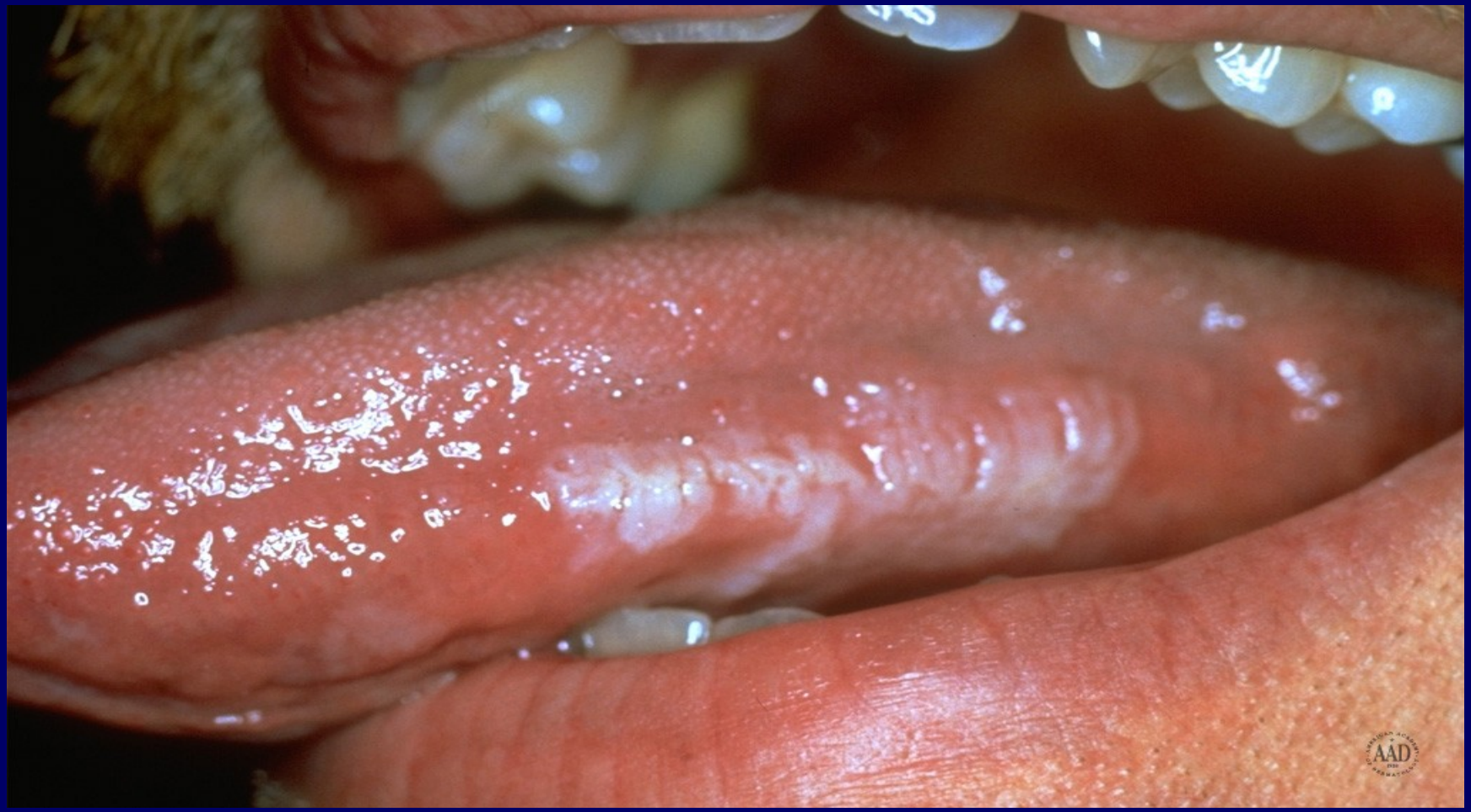
HIV

- Can we afford treatment?
  - Generic 3 drug regimen for as low as $150/year
- 3X5 Project: make medications available to another 3 million in worst areas by end of 2005
- Brazil citizens guaranteed ART by law
  - Prevalence and mortality cut in half in 5 years

KS

Giant Molluscum

Oral Hairy Leukoplakia



Condyloma

Syphilis

- Synonyms: Great pox, pox, coachman on the box; French gout; French disease; English disease, Irish mutton; ladies' fever; lifelong friend; Neapolitan bone ache; old joe; siff; Spanish needle; the old dog
- Organism: *Treponema pallidum*
- Diagnosis:
  - Darkfield
  - Non-treponemal tests (VDRL, RPR)
  - Treponemal tests (FTA-ABS,TP-PA)
  - Biopsy

Syphilis

Famous people who had it maybe for sure

- Christopher Columbus
- Pope Alexander Vth
- Voltaire
- Ludwig von Beethoven
- Charles Darwin
- Vincent Van Gogh
- Al Capone
- Adolf Hitler

Henry VIII and 5 of his wives

Ivan the Terrible

Wolfgang Amadeus Mozart

Abraham Lincoln

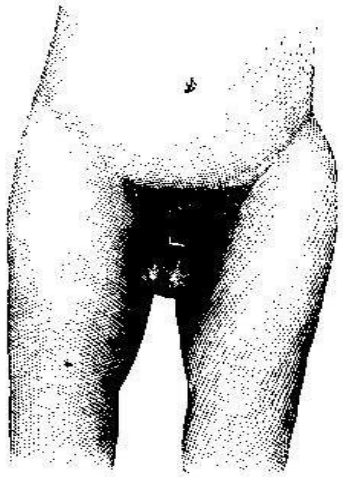
Edgar Allen Poe

Oscar Wilde

TOTAL LOSS OF PENIS FROM VENEREAL ULCERATION.

BY
P. C. REMONDINO, M.D.,
San Diego, Cal.

JOSE MONGE, a native of Sonora, Mexico, age thirty-one, in August 1881, was living with an Indian girl, with whom he remained until October of the same year, when she left him until the end of November, at which time he slept with her one night. In the middle of December, he first noticed some sores, five in number, on the glans and prepuce, near the corona. In the course of two weeks, four of the sores healed, the fifth one refusing to close. In twenty days from the closure of the four sores, they reopened; the fifth one becoming more active, gradually ate its way through the glans, which finally dropped off. The phagedenic action going on to the body of the penis, it gradually ate its way to the pubes, and by June the whole organ had disappeared.

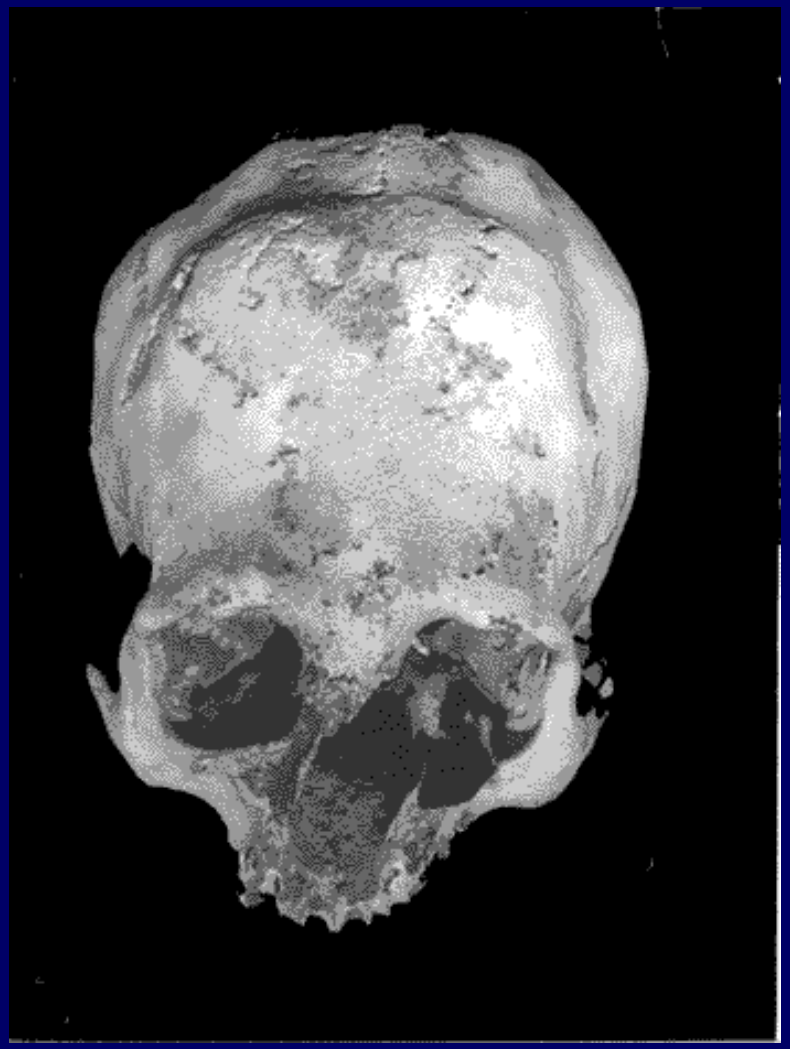


During all this time, Monge was in the mountains using the usual herb and root remedies peculiar to Mexican rural practice; never had a pubo, and only lately exhibited any constitutional symptoms. Previous health good. Mother still living. Father killed by Apaches. Brothers and sisters healthy.

I have seen many cases of syphilis in my practice, both in army and civil practice, but have never had occasion to witness a case of such rapid destruction from primary sores, and deem the case of considerable interest.

HIPAA be damned

From Pre-Columbian Chile



From Pre-Columbian Essex

Syphilis

- Epidemiology
- Highest in Sub-Saharan Africa, South/Southeast Asia and Latin America/Caribbean
- 12M cases worldwide in 1999

Syphilis Stages

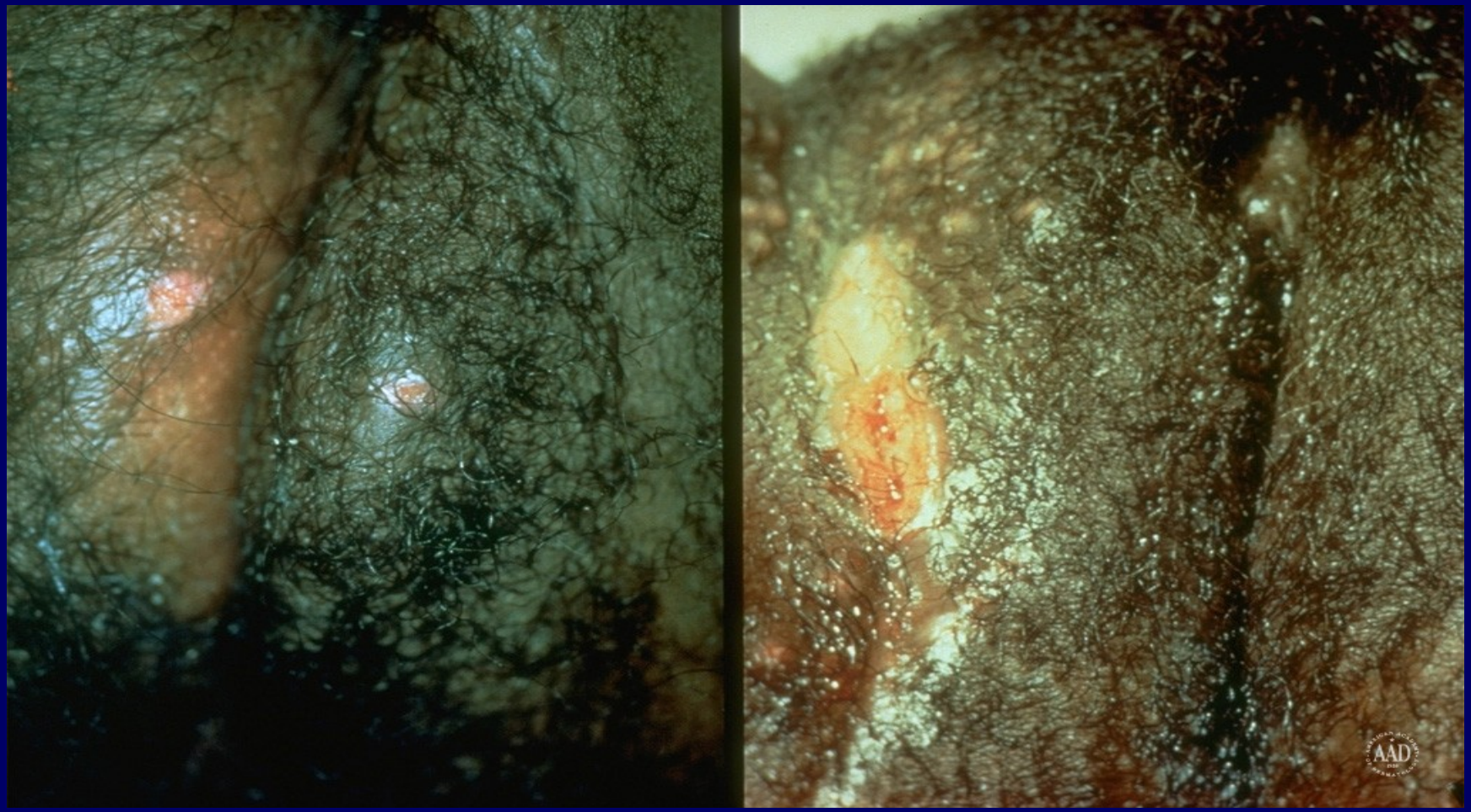
Primary

- Incubation 10-90 days (3 week average)
- Chancre: firm, painless
- Unnoticed 10-30% of cases
- Disappears spontaneously in 1-6 weeks

Primary Syphilis

Primary Syphilis

Primary Syphilis



Primary Syphilis

Syphilis Stages

Secondary

- Incubation 3-12 weeks
- May appear while chancre still present
- Pink macular eruption which evolves to papules, nodules & plaques. May become scaly
- Mucous patches, condyloma lata, and pharyngitis extremely infectious
- Alopecia, ophthalmologic, auditory, hepatic, cardiopulmonary, neurological symptoms
- Lymphadenopathy in 50-80%
- Eruptions will also resolve spontaneously

Secondary Syphilis

Secondary Syphilis

Secondary Syphilis

Secondary Syphilis

Syphilis Stages

Latent

- 1/3 of patients with untreated latent go on to tertiary

Tertiary

- Late benign: Gummas, nodules, ulcers
- Deep granulomatous and destructive mucous membrane disease
- Cardiovascular: aortitis, aortic aneurysm, artery ostia stenosis, aortic insufficiency
- Neurosyphilis: tabes dorsalis, general paresis, optic atrophy

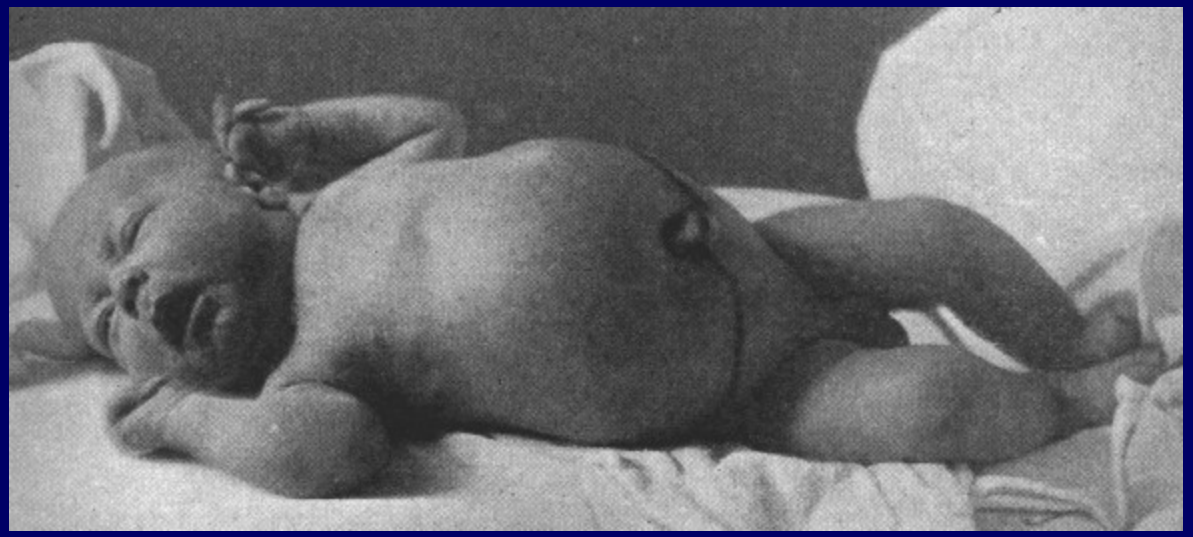
Tertiary Syphilis

Syphilis Congenital

Transplacental or at birth

- The longer the mom has it, the lower the transmission rate
- Early (1st 2 years): look like secondary syphilis, rhagades, low birth weight, hepatosplenomegaly, jaundice, anemia, pseudoparalysis, neurosyphilis
- Late (after 2 y/o): frontal bossing, saber shins, dental abnormalities (Hutchinson's teeth, mulberry molars), saddle nose, interstitial keratitis, 8th nerve deafness

Congenital Syphilis



Syphilis

Treatment

- Primary & Secondary
  - Benzathine Pen 2.4 million units IM
- Kids
  - Benzathine Pen 50K units/kg IM up to adult dose
- HIV patients
  - Same as adult repeated at 1 and 3 weeks

Syphilis

Treatment in Penicillin allergic

- Primary/Secondary:
  - Doxycycline 100mg bid f14
  - Tetracycline 500mg qid f14
  - Ceftriaxone 1gm IM qd f8-10 d*
  - Azithromycin 2 gm *

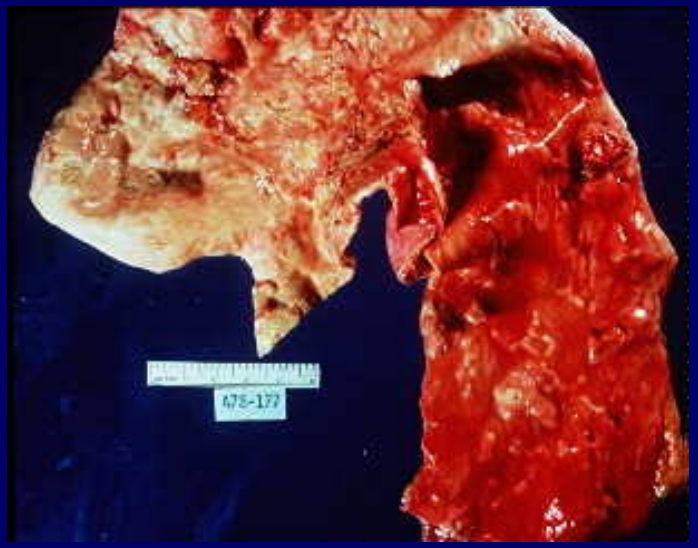
*Not completely studied and dose in HIV patients may differ

Syphilis

- Treatment Latent
  - Benzathine Pen 2.4 million units IM
- For late or unknown time latent
  - Same as above repeated at 1 & 2 weeks
- Peds parallels adult recommendations
- Neurosyphilis
  - Aqueous Crystalline Pen 18-24 million units daily for 10-14 days
  - Procaine Pen 2.4 million units IM plus probenicid 500mg qid f10-14 (if cannot hospitalize)

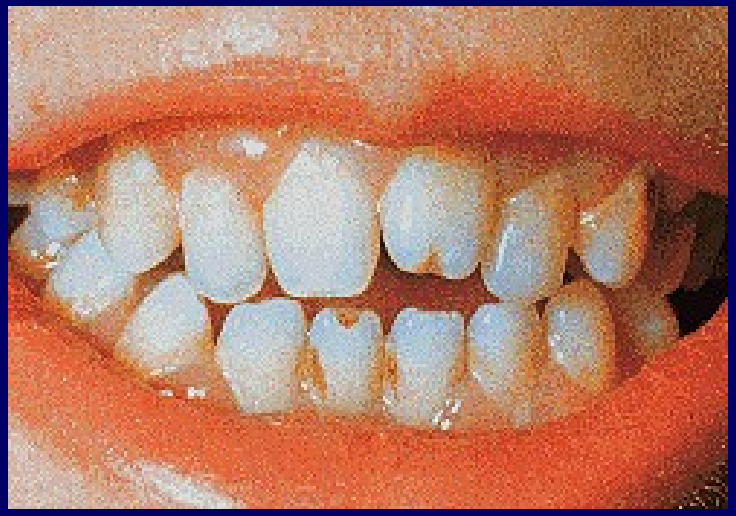
Syphilis

- Treatment penicillin allergic latent syphilis
  - Doxycycline 100mg bid f28
  - Tetracycline 500mg qid f28
- Treatment penicillin allergic neurosyphilis
  - Ceftriaxone 2gm daily IM f10-14 d



Syphilis

- Treatment congenital
  - Aqueous crystalline Pen 100-150K units/kg/d given IV as 2 doses/day
  - Procaine Pen 50K units/kg/d IM f10



Syphilis + HIV

- Prozone effect: titers so high that too much antibody for proper agglutination, must dilute
- May have unusual manifestations of both diseases
- Die sooner, especially in impoverished countries

Questions?

References

Some Good Books for Reference

- Tyring SK, Lupi O, Hengge UR Tropical Dermatology Elsevier Churchill Livingston, Philadelphia, PA 2006.
- Holmes KK, Sparling PF, Pers-Anders M, et. al. Sexually Transmitted Diseases (3rd Edition), McGraw-Hill Inc, New York, NY, 1998.

References

- Some good websites
- http://www.avert.org/statindx.htm (excellent source for HIV & STD statistics)
- http://www.who.int/en/ (portal into World Health Organization)
- http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5106a1.htm (2002 MMWR STD treatment recommendations)
- http://tmcr.usuhs.mil/ (USUHS Tropical Med site: full of great images)